Water Quality NewsFlash

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Bioretention BMPs – *Caltrans building several facilities* – The Department has completed construction of a pilot storm water bioretention best management practice (BMP) on State Route 73. Although widely used in the eastern U.S., bioretention BMPs are much less common in California. These BMPs are generally used for smaller volumes of runoff such as from parking lots or small sections of roadway. Typically, the runoff is directed to a vegetated area and forms a shallow (e.g., 6") temporary pond.

For the Route 73 BMP, a 30" layer of planting soil is overlain by mulch, and underlain by a 1 ft. gravel layer separated by a geotextile. The gravel layer includes underdrains to remove runoff that has filtered through the planting soil. The design is intended to remove standing water within 72 hours to prevent mosquito breeding. In addition, a pretreatment unit removes litter and settleable solids. The vegetation in the Route 73 BMP have had 1 ½ years to become established and water quality monitoring will start this fall.

Caltrans will start construction soon on additional bioretention areas as part of the San Francisco-Oakland Bay Bridge project. Two bioretention areas will be divided into 3 cells each—a total of 6 cells—with the goal of investigating different soil and ponding depths, as well as different vegetation within the cells. Route 73 project: http://www.owp.csus.edu/research/papers/papers/PP061.pdf

Accelerated Bacteria Test – *Results from 2-hr. test correlate with adverse health effects* –U.S. EPA researchers have announced the results of an assessment of a new 2-hour rapid method for testing beach water quality. Current bacteria testing methods require 24 hrs during which beach water quality conditions can change dramatically. The EPA reported that the new DNA-based accelerated method accurately predicted possible adverse health effects at two Great Lakes freshwater beaches. Study: http://ehp.niehs.nih.gov/members/2005/8273/8273.pdf Additional information: http://www.epa.gov/NEEAR/

A related EPA study examined five fresh and saltwater beach environments to determine the factors that most influence the measurement of beach water quality. The researchers found that, "the greatest single determinant of microbial indicator level was found to be the depth zone, or, roughly, distance from the shoreline at which the sample was collected. Bacterial densities became substantially lower as one moved from ankle-deep to kneedeep to chest-deep water." The EPA work also showed that bacteria levels tend to be higher in the morning and also at higher water levels. This corresponds with work from Southern California showing that bacteria appeared to accumulate and possibly incubate in the wrack (debris) line along the beach (see *NewsFlash 05-18*). The results of the EPA study were used to develop model monitoring protocols that can be applied to similar beaches. Study: http://www.epa.gov/nerlcwww/empact.pdf

Correction – *Augustus F. Hawkins Nature Park* – The new wetlands provide treatment to runoff from within the park rather than runoff from city streets as stated in last weeks' *NewsFlash*. Site description: http://www.lastormwater.org/WPD/program/science/augustus.htm

WQ NewsFlash is a weekly update of storm water and related news for the Department. *Verify information before taking action on these bulletins*. Contact Betty Sanchez, Betty_Sanchez@dot.ca.gov (916) 653-2115, or Fred Krieger, (510) 843-7889, fkrieger@msn.com with questions or to be added or deleted from e-mail list. Posted online at: http://www.dot.ca.gov/hq/env/stormwater/publicat/newsflash/index.htm